REMARKS

Claims 1-22 remain for reconsideration. Applicants note with appreciation the Examiner's indication that claims 5-7, 13, 14, 19, and 20 are directed to allowable subject matter and would be allowed if rewritten into independent form. Applicant has elected not to rewrite the claims at this time as it is believed that they are both novel and non-obvious over the prior art of record as discussed below.

The specification has been amended because it was noted that the "approximately equal to" symbol did not print in paragraphs [0004] and [0017] thus, the phrase has been inserted in its stead. No new matter has been added.

Claims 1-4, 8-12, 15-17, and 21-22 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,347,106 to Dijaili. This is the only outstanding issue in the present application. This rejection is respectfully traversed based on the discussion below.

Briefly, embodiments of the present invention are directed to anti-reflective (AR) coatings. As explained in paragraphs [0023] for example, AR coating of laser gain media 10 is more challenging than is the case of glass insofar as semiconductor gain media typically have a very high admittance. As the dielectric half wave layer should have a refractive index higher than that of the substrate to be AR coated, there are very few choices of suitable materials. As a result, the addition of a half wave layer results in relatively little broadening of the AR performance. Modern coating technology permits

longer/thicker depositions than had been available heretofore. Hence, an alternate half wave flattening design approach is possible. The arc length of the flattening layer can be increased not by choice of material per se, but rather by number of "windings". Windings as used here refer to the thickness of the half-wave layer where each addition of a half wave thickness results in an additional winding or loop around the circle 30. In this way, the compensating effect of the half wave or "absentee" layer can be tailored for a given material, leading to significant improvement in AR bandwidth.

The reference to Dijaili is unrelated to antireflective coatings. Instead, this reference appears to be directed to thermally robust optical amplifiers and laser diodes. The Examiner points to Figure 3A for showing a semiconductor laser having at least one anti-reflective layer having an admittance or reflective index between that of the gain media and am adjacent media (Figure 3A; 100-107) and an absentee layer having an index of refraction greater than the gain media.

However, Figure 3A, items 100-107 do not appear to show this at all. Instead, Figure 3A 100 shows a Bragg mirror. Thus, this is reflective, not anti-reflective. Items 100-107 comprise the following as set forth on column 6, lines 1-32:

100: Bragg Mirror;

101: p or n type semiconductor region;

102: active region;

103: opposite p or n semiconductor regions as 101;

104: Bragg Mirror;

105: semiconductor substrate from which regions from which 101, 102, 103, and 104 are grown;

106: ohmic contact;

107: ohmic contact.

Thus, it is respectfully submitted that Figure 3A does not teach or suggest, or for that matter, is remotely related, to Applicant's claimed invention. Further, as discussed at column 6, lines 6-7, the "function" of the Bragg mirror 100 of Figure 3A is to "*reflect optical laser light*". Thus, Dijaili is unrelated to anti-reflective coatings but instead appears to be oppositely related to reflective devices.

Independent claim 1 recites "at least one anti-reflective layer having an admittance between that of a gain media and an adjacent media; an absentee layer having an index of refraction greater than said gain media and having a thickness corresponding to a number of half waves" (emphasis added).

Independent claim 8 recites "applying an absentee layer having a thickness corresponding to a number of half wave thicknesses to an optical media, said absentee layer having an index of refraction greater than that of said optical media; and applying an antireflective layer comprising at least one material having an admittance between that of said optical media and an adjacent media" (emphasis added).

Independent claim 17 recites "a tunable gain media to output a range of wavelengths around a center wavelength λ.; at least one anti-reflective layer

having an admittance between that of said gain media and an adjacent media; an absentee layer having an index of refraction greater than that of said gain media" (emphasis added).

The above features recited in Applicant's claims are not taught or suggested by Dijaili as would be required to sustain a rejection under Section 103. As such, it is respectfully requested that the outstanding rejections be withdrawn.

In view of the foregoing, it requested that the application be reconsidered, that claims 1-22 be allowed and that the application be passed to issue. Please charge any shortages and credit any overcharges to Intel's Deposit Account number 50-0221.

Respectfully submitted,

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